Friday, 26 March 2010 18:15–19:15

POSTER SESSION

Detection, diagnosis and imaging

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Follow-up CT of PET-CT detected hypermetabolic lesions in breast cancers

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Background: To evaluate the outcomes of the PET detected hypermetabolic lesions in the lungs of breast cancer patients, as correlated with follow up CT findings and to analyze the PET and CT findings of hypermetabolic lesions in PET-CT for differentiation benign from malignancy.

Materials and Methods: For recent 4 years, we retrospectively analyzed the PET-CT and follow up chest CT findings of breast cancer patients. Total 61 patients were included (age range from 34 to 69 years old). The inclusion criteria were (a) one or more hypermetabolic foci, regardless the dimension of PET-CT (Gemini TF, Philips Medical System, Netherlands), (b) a peak SUV (standardized uptake value) is over 2.5, higher than that of mediastinum, and (c) a newly developed lesion, compared with preoperative or initial PET-CT. In 9 patients, pathologic correlation was done for the nodule or consolidative lesions (percutaneous needle biopsy in 7, excision in 2). Remaining 52 patients, follow up CT scans were done.

Results: Total 61 patients were included (age ranging from 34 to 69 years old). The mean interval between PET-CT and chest CT was less than 51 days (from 3 to 102 days). In 9 cases, three were granulomas, four cases were metastatic lesions from breast cancer, two cases were primary lung cancers (bronchioloalveolar carcinomas). Remaining 52 patient, lesions were decreased (26) or disappeared (9) on follow up CT scans. In fifteen patients, the nodular lesions were stable over 2 years follow up.

Conclusions: In the patient of breast cancer follow up with hypermetabolic foci, detected on follow up PET-CT, dedicated CT scan is essential. Most of the lesions were transient findings, such as eosinophilic pneumonia. But relative high percentage of metastases (4/61, 6.6%) and double primary lesions (2/61, 3.3%) were diagnosed. As correlated with clinical findings, pathologic and laboratory correlations are important to exclude metastatic or new malignant lesions.

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Evaluation of the effectiveness of the FDG-PET (positron emission tomography)-CT as the preoperative method for the breast cancer

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Background: FDG-PET-CT is effective as a search of the distant metastasis in breast cancer as Preoperative management. However, the accumulation to the primary lesion changes by a case. In comparison with the pathological findings of the primary lesion, we evaluated the effectiveness of FDG-PET-CT.

Materials: Fifty-five patients were recruited, 57 lesions were analyzed. The cases of DCIS (ductal carcinoma in situ) or neoadjuvant chemotherapy were excluded. Max SUV (standardized uptake value) more than 2 of the primary lesion provide the significant accumulation in FDG-PET-CT.

Results: 35 lesions were accumulated in Max SUV more than 2. The mean tumor size is 30.0 mm in the group of Max SUV more than 2, but 19.7 mm in the group of Max SUV less than 2. 13 in 14 lesions of ER negative cases were accumulated significantly for 22 (51.6%) in 43 lesions of ER positive cases. 10 (83.3%) in 12 lesions in HER2 positive cases were accumulated significantly 24 (54.5%) in 44 lesions in HER2 negative cases. In particular, triple negative cases (ER(−)/PgR(−)/HER2(−)) were accumulated significantly for 5 (83.3%) in 6 lesions. In nuclear grade, grade 3 8/11 (72.7%) were accumulated significantly for both of grade 1 23/38 (60.5%) and grade 2 4/7 (57.1%). In nuclear mitosis, score 3 5/6 (83.3%) were accumulated significantly for both score 1 24/41 (58.5%) and score 2 5/8 (62.5%). In status of lymphvascular invasion, 15 (60%) in 25 lesions of positive status were not accumulated significantly for 20 (62.5%) in 32 lesions of negative status. 9 (69.2%) in 13 lesions of positive lymph node metastasis were accumulated significantly for 22 (55%) in 40 lesions of negative lymph node metastasis.

Conclusions: The cases of Max SUV more than 2 of FDG-PET-CT were accumulated significantly in that biological characteristics are malignant, therefore, these cases needed adjuvant chemotherapy mostly. FDG-PET-CT as the preoperative method evaluate biological characteristics and we will be able to select the case of neoadjuvant chemotherapy.

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Breast cancer risk and detection after chest wall irradiation for paediatric neoplasms

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Background: High number of long term survivors after chest wall irradiation develop a second cancer that may be the leading cause of death. This is particularly relevant after paediatric neoplasms, since radio-induced breast cancer may occur earlier than expected in general population, when screening programmes are not applied for early detection. The strategies for surveillance are not well defined and no suggestions exist. The aim of this study was to evaluate the long-term risk to develop breast cancer in this subgroup of patients by an intensive screening programme.

Patients and Methods: We planned to enrol females regularly followed at the National Cancer Institute of Milan that were treated with chest wall radiotherapy for paediatric cancer. In 2002 we identified a cohort of patients who were at least five years disease free. They were contacted by mail, inviting them to follow a specific surveillance program for early diagnosis of breast cancer; 86 women answered with acceptance and represent the subject of this study. Clinical Breast Examination (CBE), Mammography (MX) and Ultrasonography (US) were yearly performed for breast cancer screening. From October 2007 Magnetic resonance (MR) was introduced in the screening round.

Results: Nine patients had pathologically proved breast cancer and the over all incidence of breast cancer was 2.3%. Median age at diagnosis was 33 (range 26−49 years). Seven cancer were invasive (three were stage I and four were stage II); the remaining was in-situ. We found a sensitivity of 44%, 78% and 56% for CBE, MX and US respectively. Three patients had a pattern of microcalcifications detected by MX as sole finding. After that RM was introduced, one cancer was diagnosed and detected only by RM.

Conclusion: We don't know whether this intensive screening programme is able to provide an effect in terms of saved years of life in such high risk women, further studies are required to give an answer to this specific question. In the meantime we agree with most authors suggesting a specific surveillance for the earlier detection of breast cancer after chest wall irradiation.

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Prognostic value of screen-detection in invasive breast cancer; a hospital-based consecutive cohort of 2592 patients

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Background: Mammographic screening has led to a proportional shift towards earlier stage breast cancers at presentation. The aim of our study was to assess whether method of detection yield survival benefit beyond stage migration.

Material and Methods: Patients aged 50−69 years diagnosed with invasive breast cancer between 1990 and 2001 were selected from a Dutch cancer hospital. We identified 3 types of carcinomas based on method of detection: 1) screen-detected, mammographically detected in first or subsequent screening rounds (n = 958); 2) interval, diagnosed during the interval between two screening rounds and <24 months of a negative screening (n = 417); 3) non-screenings-related, symptomatic carcinomas in patients who were not (or no longer) participating in the screenings program (n = 1217). Cox proportional hazard models were used to calculate hazard ratios (HRs) for method of detection adjusted for stage and adjuvant systemic therapy. Because of the gradual implementation of population-based screening in the Netherlands, analyses were stratified in two periods of diagnosis, i.e. 1990–1996 (introduction; n = 1614) and 1997–2000 (full coverage; n = 978).

Results: Screen-detection was a significant predictor for prolonged OS and BCSS compared to non-screenings-related carcinomas. This effect was irrespective of period of diagnosis, with adjusted HRs for OS and BCSS of 0.77 (95% CI 0.64–0.92; p = 0.005) and 0.66 (95% CI 0.50–0.86; p = 0.002), for patients diagnosed between 1990 and 1997, and 0.73 (0.52–1.02; p = 0.07) and 0.63 (95% CI 0.40–1.01; p = 0.05) for patients diagnosed between 1997 and 2001, respectively. The survival benefit of screen-detection was comparable across tumor size and nodal status categories,